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First results from the NA62 straw spectrometer

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The NA62 experiment at CERN is a fixed target experiment, it is located in the north area SPS high intensity facility. It aims at a precision measurement of the ultra-rare decay $K^+ \rightarrow \pi^+ \nu \bar{\nu}$. In order to achieve this goal a low mass ($\sim 1.8\% X_0$) spectrometer has been built to track charged kaon decay products. The system consists of ~ 7000 straw tubes operating in vacuum. The analog signals are shaped, amplified and discriminated by an ASIC chip (CARIOCA) mounted on the front-end board (cover) and a TDC was implemented in a FPGA. The data is sent from the cover to the Straw Readout Board (SRB) and then to the PC farm for analysis and storage. The first NA62 physics run took place in October-December 2014 and both the detector commissioning and the measured performance will be presented. The goal of this presentation is to give a general overview of the system and in particular the readout scheme. The results obtained from the alignment, r-t dependance, track fit and time resolution, will be described in detail. A comparison with results from GARFIELD simulations will also be presented.

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